

# Phonetics

## 1 Sounds

- *day*
- How many sounds are there in *day*?
- Where do the sounds /d/, /eɪ/, /j/ begin and end? (Convention: phonological symbols appear between *slashes*)
- Are the sounds in *day* the same each time someone pronounces them?

## 2 Sounds and spelling

- Spelling can contain consonants that are ...
  - knuckle
  - bomb
  - science
  - listen
- Spelling can contain vowels that are ...
  - force
  - goat
  - dead
- Spelling can contain consonants or consonant groups that are ...
  - cider
  - sour
  - scent
- Spelling can contain vowels and vowel groups that are ...
  - she
  - sieve
  - peer

- pea
- Spelling can contain a consonant that is ...
  - cease
  - can
- Spelling can contain a vowel that is ...
  - he
  - hem
  - women

What is *ghoti*?

### 3 IPA

To represent sounds reliably: *International Phonetic Alphabet* (IPA)

#### 3.1 Consonants

p	pill	t	till	k	kill
b	bill	d	dill	g	gull
m	mill	n	nil	ŋ	ring
f	feel	s	seal	h	heal
v	veal	z	zeal	l	leaf
θ	thistle	tʃ	chill	r	reef
ð	this	dʒ	jam	j	you
ʃ	sheer	w	witch	ʒ	azure

#### 3.2 Vowels

i	beet	ɪ	bit
eɪ	bait	ɛ	bet
u	boot	ʊ	foot
o	boat	ɔ	bore
æ	bat	ɑ	pot
ʌ	butt	ə	sofa
aɪ	bite	aw	bout
ɔɪ	boy		

## 4 Phonetics and phonology

- *Phonetics* (physical properties)
  - articulatory (sound production)
  - acoustic (physical properties of sounds)
  - auditory (sound perception)
- *Phonology* (sounds as parts of a system)
- numismatics vs. economy

## 5 Articulatory phonetics (consonants)

### 5.1 Airflow

- English sounds: airflow from the lungs
- Airflow can be obstructed in various places in the vocal tract

### 5.2 Place of articulation: obstruction of the airflow

#### 5.2.1 Bilabial sounds

- Upper and lower lips
- /p/ (pie), /b/ (by), /m/ (my), /w/ (why)

#### 5.2.2 Labiodental sounds

- Upper teeth and lower lip
- /f/ (fear), /v/ (veer)

#### 5.2.3 Interdental sounds

- Pronounced with tongue between teeth
- /θ/ (thistle), /ð/ (this)

#### 5.2.4 Alveolar sounds

- Tongue touching or near the alveolar ridge (hard ridge just behind the teeth)
- /t/ (teeth), /d/ (dear), /n/ (near), /s/ (sear), /z/ (zero), /l/ (lore), /r/ (roar)

#### 5.2.5 Palatal sounds

- Tongue touching the roof of the mouth behind the alveolar ridge
- /ʃ/ (sheer), /ʒ/ (azure), /tʃ/ (church), /dʒ/ (judge), /j/ (you)

### 5.2.6 Velar sounds

- Back of the tongue touches the soft palate (= velum)
- /k/ (king), /g/ (gong), /ŋ/ (king, gong)

### 5.2.7 Glottal sounds

- Air flows through the glottis (= opening between vocal chords)
- /h/ (house)

## 5.3 Voicing

- Voiceless sounds: vocal chords are not vibrating
- Voiced sounds: vocal chords are vibrating (air passing through them)

Voiceless consonants	p			f	θ	t	s				ʃ		tʃ	k		h
Voiced consonants	b	m	w	v	ð	d	z	l	r	n	ʒ	j	dʒ	g	ŋ	

## 5.4 Oral and nasal sounds

- Nasal sounds: the air passes through the nasal cavity
- Oral sounds: no air passes through the nasal cavity
- Airflow is regulated by the velum (when raised, the velum blocks passage to the nasal cavity)
- All nasal consonants are voiced

Nasal consonants	m			n								ŋ		
Oral consonants	p/b	f/v	θ/ð	t/d	s/z	l	r	ʃ/ʒ	j	tʃ/dʒ	k/g	h		

## 5.5 Manner of articulation

### 5.5.1 Stops

- The airflow is completely blocked in the oral cavity, and the stop is suddenly released
- The place of the block can vary (place of articulation)
- The airflow can be blocked in the oral cavity, but uninterrupted in the nasal cavity (m, n, ŋ)
- If the vocal cords vibrate even during closure, the stop is voiced
- *Aspiration*: the vocal cords can stay apart even after the stop is released (heard as a puff of air). Aspirated **p**it vs. nonaspirated **sp**it
- p/b, m, t/d, n, k/g, ŋ

### 5.5.2 Fricatives

- No total obstruction in the oral cavity, a small aperture is open
- Small aperture causes friction
- Friction can appear at various places along the vocal tract (place of articulation)
- The vocal cords can vibrate (voiced fricatives) or not (voiceless fricatives)
- f/v, θ/ð, s/z, ʃ/ʒ, h

### 5.5.3 Affricates

- Stop followed by fricative (produced at the same place)
- English: only alveopalatal (alveolar – palatal) affricates. German: labial affricates (e.g. *Pferd* ‘horse’)
- Voiced or voiceless, depending on whether the vocal cords vibrate or not
- tʃ/dʒ

### 5.5.4 Liquids

- No real friction in the oral cavity; the airflow is redirected
- l, r
- /l/ is a *lateral* sound; air passes on two sides of the tongue
- Various pronunciations of /r/
- English liquids are normally voiced, but not always: /l/ in *play* is voiceless

### 5.5.5 Glides

- Little or no obstruction in the mouth
- Glides resemble vowels (What is the difference between /j/ and /i/? Between /u/ and /w/?)
- Glides usually precede or follow a vowel
- A [glide + vowel] or [vowel + glide] unit is a *diphthong* (as in *you, toy, wow*, etc.)
- Glides are voiced
- j, w